22 January 2016

Stephanie Fuhs, Project Manager
Department of Planning
County of San Luis Obispo
976 Osos Street, Room 200
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vial email: sfuhs@co.slo.ca.us

Re: Response to email of 01/13/2016 Re: Munsell Color Condition of Approval
DRC2015-00054 – J & R SLO Properties Minor Use Permit

Dear Ms. Fuhs:

Pursuant to your recent email inquiry regarding the above reference projects' exterior building colors, we understand there is a subdivision Condition of Approval that *"requires that colors be "subdued" and blend with the natural environment…"*. In response, we submit the following information on this subject.

Background:

The following excerpts, taken from the governing documents for Tract 2368 / East Airport Commercial Park, address the matter of architectural visibility and color compatibility:

Tract 2368 Condition of Approval #7.c
Visibility of the exterior of all buildings or structures (e.g., water tanks, etc.) shall be subdued with darker colors (preferably with a majority of colors with a chroma and value of no greater than "6", as found in the Munsell's Book of Color) that blend with colors of the natural environment. Specific development colors shall be reviewed at the time of specific use permits are submitted for approval;

Tract 2368 Architectural Design Guidelines, Section IX.E.d:
In general, colors should be restrained. Colors that are with the range of natural tones compatible and complementary found in the surrounding landscape are preferable for exterior walls. Trim and accent colors may be brighter, but should still be somewhat muted.

In response to the Tract COA regarding the provision for subdued or darker colors, preferably with the "*majority*" of colors with a chroma and value no greater than a "6" on the Munsell Book of Color, we the offer the following abstract, research, analysis, discovery and conclusions.

Abstract:

In general, the proposed building's exterior color scheme is a simple black and white color palette, and is therefore essentially devoid of any color or hue in the academic sense, with the one exception being the gold-yellow accent color (*Sherwin Williams #6671 / Color Value: Y-O/Y/71*), which is used sparingly as an accent color only. This absence of overall exterior building color somewhat nullifies any discussion regarding compliance with the notion of chroma or hue as it relates to the exterior color palette of this project. However, to determine if the proposed color scheme complies with the "darker color" requirement with a majority of colors having a chroma and value no greater than a "6" on the Munsell Book of Color, we turn to the reference source itself for definitions, terms, and compliance.

Analysis:

In order to make findings for support in this matter, a general background analysis of the Munsell Book of Color is warranted, followed by a resultant discussion of salient points and conclusions.

- ***Hue***

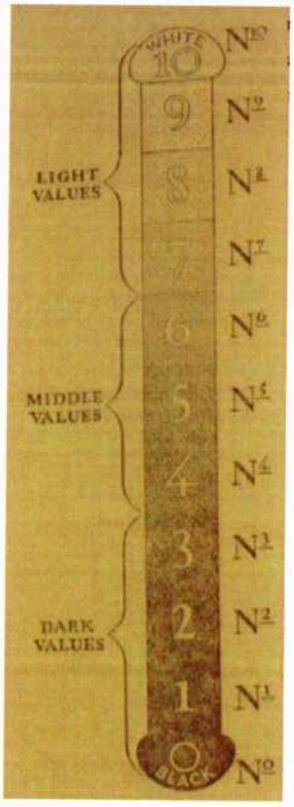
According to the Munsell Book of Color, *Sunlight is composed of every possible spectrally pure color, so balanced in combination that no one color is dominant and the result is a pure white light.*[1] Passing a ray of sunlight through a prism breaks the light up into a spectral band of its component colors, Red, Yellow, Green, Blue, etc. This specific distinguishing by name of any color of the spectrum from the other colors, indicates the HUE, or common name, of that color[2]. Therefore, the "color" white is actually a perfectly balanced combination of all possible spectral colors, and by definition, has no specific hue. Conversely, the color black is the absence of all color, and also has no specific color or hue.

- ***Value***

Pure White is so light that no color can be seen in it. Pure Black is so dark that no color can be seen in it. But between the two can be distinguished various degrees of light strength, ranging from the darkest gray just above Black to the lightest gray just below White, and color can be seen at these various intermediate levels of light strength. For instance, Yellow is usually a light color, nearer to White than to Black. Purple-Blue is a dark color, nearer to Black than to White. This variable light strength is called VALUE, most Yellows being rather high in VALUE, and most Purple-Blues being rather low in VALUE, although of course Yellow can be very dark and Purple-Blue can be very light.

The eye can readily distinguish and memorize ten different steps of VALUE, graduated from Black at the bottom up to White at the top. It is not difficult to estimate with the unaided eye the approximate VALUE of any color, and it can be done accurately by comparing the color with the VALUE scale.[3]

Theoretically perfect White and theoretically perfect Black are practically unattainable, though they can be very closely approached. Perfect Black is indicated by the numeral 0 at the bottom of the VALUE scale. The next step upward is 1, then 2, 3, 4 and so on up to White at 10. This places the fifth



Munsell Value Scale[1]

step at the middle, representing a Gray half-way between Black and White. Any pure Gray is known as Neutral and is indicated by the initial N, with its level indicated by a numeral set above a line at the right, as N 2/, N 3/, N 7/, etc. N 0/ is Black and N 10/ is White, but N 1/ is the Black usually seen and N 9/ the usual White.

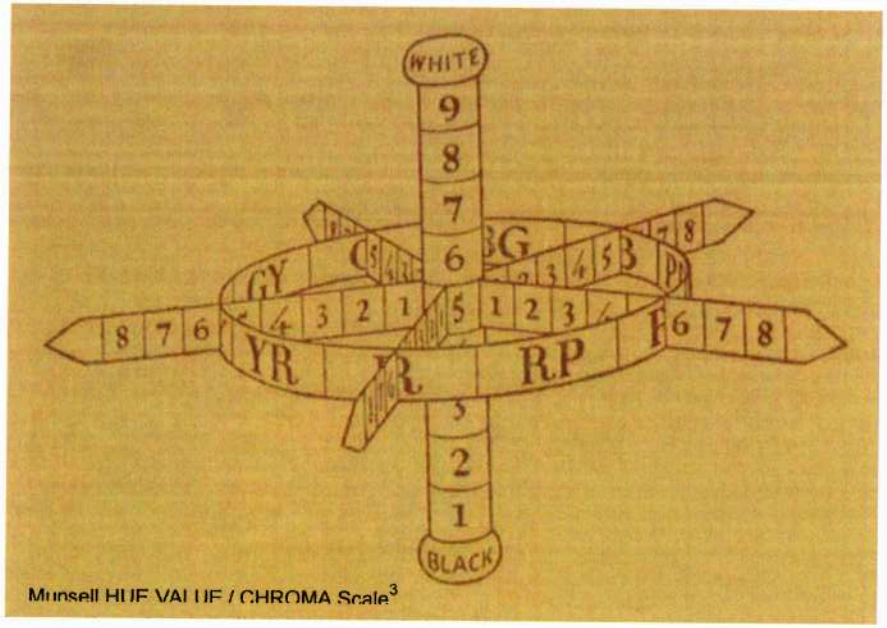
Although the majority of the proposed project's exterior color scheme contains no colors or hues, we can still utilize the Munsell VALUE scale above to determine compliance with the condition. Our findings under the *Conclusions* section below demonstrate the *majority* (61%) of the exterior colors are less than "6" on the Munsell Value scale.

- ***Chroma***

Two colors may be the same in HUE and the same in VALUE (that is, neither is lighter nor darker than the other), and yet be different in color "strength". One may be a strong Red and the other a weak, grayish Red. This difference is in the dimension of CHROMA, by which the degree of color strength or intensity is measured and indicated.

While HUE is the name of a color, VALUE is the amount of light in a color. CHROMA is the degree of strength in a color[3].

A step in CHROMA is the unit of measure of change in a HUE between NEUTRAL Gray and the maximum CHROMA of the HUE. These steps are graduated from NEUTRAL Gray out to the strongest CHROMA obtainable in any HUE at any given level of VALUE. The steps are numbered outward from N, toward the maximum CHROMA, and in notating the color the numeral is placed below the line, under the number of value. For instance, a Red midway between White and Black, and five steps out in CHROMA, would be written R 5/5. A Red at the sixth level of VALUE and three steps out in CHROMA would be written R 6/3. The color commonly known as "rose" is a grayish Red, a Red that is weak in CHROMA, generally in the neighborhood of R 6/4. Thus the arrangement in notation of HUE, VALUE, and CHROMA is H V/C.



Munsell HUE VALUE / CHROMA Scale[3]

Again, the project's general absence of any significant color or hue renders any chromatic hue analysis anecdotal. However, by comparing the Munsell H V/C diagram above to the project proposed color elevations, we can conclude that the *majority* (94%) of the project's exterior colors comply with a CHROMA of less than "6", as further analyzed and described below.

Discovery

With the preceding information in mind, we analyzed and prorated the individual exterior building colors on an elevation-by-elevation basis. Note that since clear transparent glass by definition has neither chroma, value, nor hue, windows and storefront elements were not considered in this analysis.

North Elevation:

Black = 39% (N1)
White = 57% (N9)
Gold = 4% (YR 7/10)

West Elevation:

Black = 68% (N1)
White = 31% (N9)
Gold = 1% (YR 7/10)

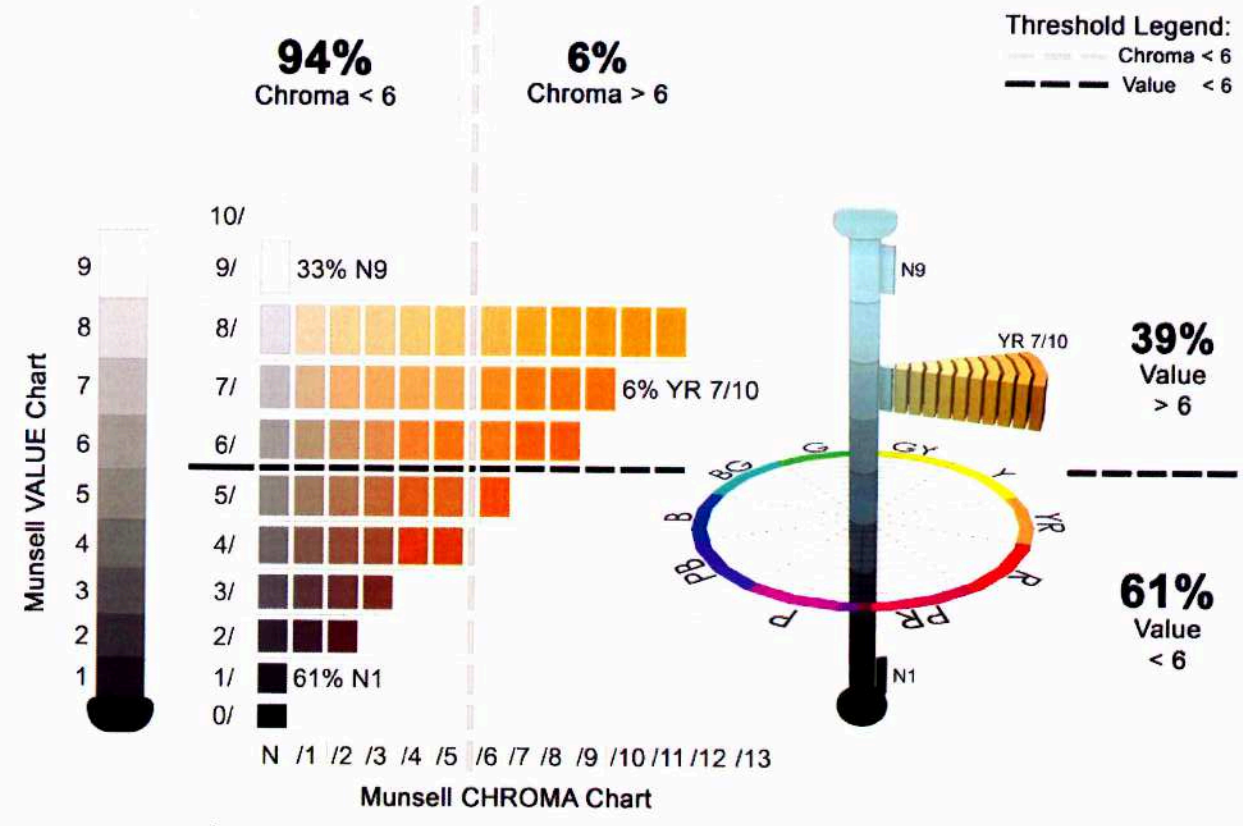
South Elevation:

Black = 51% (N1)
White = 45% (N9)
Gold = 4% (YR 7/10)

East Elevation:

Black = 70% (N1)
White = 16% (N9)
Gold = 14% (YR 7/10)

Considering then the aggregate percentage of colors for all four elevations, black represents 61%, white represents 33%, and gold-yellow represents 6% of the overall elevation color. Graphically summarizing the foregoing analysis, we compare the Munsell Value and Chroma charts to the aggregate percentage of the building's exterior colors, which yields the following:



Munsell VALUE Chart [3] Munsell VALUE + CHROMA Chart [4] Project's VALUE + CHROMA Analysis

Conclusions:

As you can see from the data, analysis and graphics above, the *majority* of the exterior building colors are below a CHROMA and VALUE of "6" on the Munsell Book of Color. Specifically, 94% of the projects aggregated colors have a CHROMA less than "6", and 61% of the projects colors have a VALUE less than "6". Furthermore, the average CHROMA for the project is 3.33 and the average VALUE for the project is 5.66, both of which are less than "6" as required in COA #7.c.

In addition to the majority of the proposed exterior wall colors being restrained, the gold-yellow accent color trim elements, as well as the proposed "green wall" feature resonate with the *natural tones* that are found in the local grasses, rolling hills, and *surrounding landscape*, as required per the Architectural Design Guidelines for Tract 2368, Section IX.E.d.

We believe the foregoing information provides sufficient data and analysis to demonstrate conformance with the required condition of approval. Please advise as to our scheduled hearing date for use permit review, as our clients are extremely anxious and excited to move this project ahead.

Sincerely,

garcia architecture + design

George Garcia, AIA, RIBA

References cited:

1. http://munsell.com/color-blog/munsell-book-of-color-1929-hue-value-chroma/
2. http://munsell.com/color-blog/munsell-book-of-color-1929-hue-value-chroma/#sthash.BaSx1e2E.dpuf
3. http://munsell.com/color-blog/munsell-book-of-color-1929-hue-value-chroma/
4. http://facweb.cs.depaul.edu/sgrais/munsell_color_system.htm

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